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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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Jerome L. Elkind

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EXAMINER

VANORE, DAVID A

ART UNIT

PAPER NUMBER

2881

DATE MAILED: 01/30/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/823,715

Applicant(s)

ELKIND ET AL.

Examiner

David A Vanore

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-- The MAILING DATE of this communication appears on the cover sheet with the corresponding address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 06 December 2002.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 8-20 is/are pending in the application.
- 4a) Of the above claim(s) 1-7 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 8-20 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 30 March 2001 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892) 4) ☐ Interview Summary (PTO-413) Paper No(s). _____
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948) 5) ☐ Notice of Informal Patent Application (PTO-152)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____ 6) ☐ Other: _____

Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 8, 11, 14, and 17-20 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

The term "adapted to" in claims 8, 11, and 14 is a relative term which renders the claim indefinite. The term "adapted to" is not defined by the claim, the specification does not provide a standard for ascertaining the requisite degree, and one of ordinary skill in the art would not be reasonably apprised of the scope of the invention. Claims 8, 11, and 14 recite an analyte detection chamber which is adapted to generate a molecular interaction bias. This is indefinite language because the claim does not point out positive steps to enable one skilled in the art to so adapt such a detection chamber, nor do the claims recite any material elements which would perform the function of generating a molecular interaction bias.

The term "adapted to" in claims 17 and 18 is a relative term which renders the claim indefinite. The term "adapted to" is not defined by the claim, the specification does not provide a standard for ascertaining the requisite degree, and one of ordinary skill in the art would not be reasonably apprised of the scope of the invention. Claims 17 and 18 recite a sample delivery and sensing apparatus which is adapted to perform a method where an analyte detection chamber is adapted to impart an interaction bias to a sample. This is indefinite language because the claim does not point out positive

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steps to enable one skilled in the art to so adapt such a detection chamber or an associated device for carrying out the method, nor do the claims recite any material elements which would perform the function of generating a molecular interaction bias.

The term "adapted to" in claims 19 and 20 is a relative term which renders the claim indefinite. The term "adapted to" is not defined by the claim, the specification does not provide a standard for ascertaining the requisite degree, and one of ordinary skill in the art would not be reasonably apprised of the scope of the invention. Claims 19 and 20 recite a conjugated analyte which is adapted for the kinetically enhanced measurement of molecular interactions. This is indefinite language because the claim does not point out positive steps to enable one skilled in the art to so adapt such an analyte, nor do the claims recite any chemical structure or chemical behaviors which would enable one to select or modify an analyte to enhance the measurement of molecular interactions in competitive binding assays.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 8-20 are rejected under 35 U.S.C. 102(b) as being clearly anticipated by Morozov et al.

Morozov et al. teaches a device and method for surface plasmon analysis where an analyte and ligand, which are competitors for binding sites are introduced into a

device where an electrical or magnetic field is applied to cause particles to experience a bias, comprising the following with regards to claims 8-16:

1) Surface plasmon resonance microscope (Col. 26 Lines 5-13) which inherently includes a surface plasmon sensor and a surface plasmon resonance layer in optical communication with the an exterior surface of the sensor. This is inherent because if the layer were not in optical communication with the external surface of the sensor, light would not be able to impinge on the plasmon layer and no detection could take place. See US Patent 5,485,277 (Foster) Fig. 2a and Col. 5 Line 10-27.

2) A transparent housing and source of electromagnetic radiation (Col. 16 Line 65-Col. 17 Line 11).

3) A photodetector (520) and associated light source (518) for detecting changes in a sample (Col. 13 Line 64 – Col. 14 line 19).

4) An analyte detection chamber (Fig. 31) where electrical and magnetic fields are generated to cause bias forces in an analyte substance (Col. 14 Lines 20-58).

5) A flow cell having flow path for use in a surface plasmon resonance sensor (Fig. 8). As discussed above, the method and apparatus for bound analyte/ligand analysis as taught by Morozov et al. is taught to be usable in surface plasmon microscopy.

Regarding claims 17 and 18, the device of Morozov et al. teaches the method of claims 15 and 16 as recited above. Since the apparatus of Morozov et al. includes a sample delivery and sensing means as cited above, in the form of the surface plasmon

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resonance microscopy means and the flow cell, claims 17 and 18 are anticipated by Morozov et al.

Regarding claims 19 and 20, Morozov et al. teaches a device and method which uses DNA-protein cross linked samples. DNA is nucleic acid and the binding between DNA and protein samples is competitive. Therefore, Morozov et al. anticipates claims 19 and 20.

Conclusion

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

The following US Patent documents teach the application of magnetic or electrical fields in a surface plasmon resonance microscope:

US Patent 5,955,729 (Nelson); US Patent 5,442,448 (Knoll);

US Patent 6,330,062 (Corn et al.); US Patent 5,327,225 (Bender et al.);

US Patent 5,946,083 (Melendez et al.) ; US Patent 5,835,645 (Jorgenson et al.);

US Patent 5,779,976 (Leland et al.) ; US Patent 5,846,485 (Leland et al.) ;

US Patent 5,798,083 (Massey et al.) ; US Patent 5,935,779 (Massey et al.) ;

US Patent 6,207,369 (Wohlstadter et al.);

and US Patent Application 20020168295 (Cunningham et al.).

Any inquiry concerning this communication or earlier communications from the examiner should be directed to David A Vanore whose telephone number is 703-306-0246. The examiner can normally be reached on M-F 7:30-5:00.

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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, John Lee can be reached on 703-308-4116. The fax phone numbers for the organization where this application or proceeding is assigned are 703-872-9318 for regular communications and 703-872-9319 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-308-0956.

dav
January 18, 2003


JOHN R. LEE
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2880